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An Interaction in glass

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AN INTERACTION IN GLASS

BY

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(I) INTRODUCTION:

This thesis is a conceptual look at the relationship between mankind and nature. Initially this was to be accomplished using blown glass forms in conjunction with fabricated or found objects such as tool or machine parts. This idea eventually evolved into the use of vessels and organic glass forms to achieve the same objectives. There are two major components of this thesis. The first section will explain the concept behind my thesis statement that is a relationship exists between man and nature. It will also be a vague outline showing the stages of thought that lead to me to my final pieces. The second section will explain the technical processes and what knowledge I gained from these processes. This thesis is an attempt to show the direct correlation and relationship between human life and nature.

The balance between the human race and nature has been unequally weighted for many years throughout history. From the beginning of the Industrial Revolution to modern day technology, man has continued to exert its control over nature. Once we, the human race, became aware that we could benefit from controlling nature, we used it to further our needs. Today man kind is slowly becoming more aware of the loss of the very precious balance it once had with nature.

Artists use their medium to arouse questions dealing with issues that they feel are important. As a glass blower, I chose glass to represent my viewpoint that there is a balance between man and nature. With this idea in mind, I tried to create pieces that addressed my overwhelming concern about this issue.

(II) THE CONCEPT:

The task at hand was quite difficult. I had to somehow illustrate, through my work, the idea that man's egocentrism has taken over the natural balance between man and nature. When I first began my thesis, I convinced myself that it would be too difficult to use only glass to support my statement. I therefore decided to use other objects of man made origin in conjunction with glass. When I first began working with glass it was in a school that solely taught blown glass skills. The facilities were very limited and so the chance to use glass as an art medium was not widely available. When I finally arrived at RIT, and began using glass as a means of personal expression, it was like learning a new language, and as with all new languages, it took time to understand and to use it well.

My first pieces were very conceptual; they questioned the world in an abstract way. Most of my first pieces did not show or question this relationship as was intended (Fig. 1.1). It soon became clear that I could much better convey my feelings by using strictly glass. When glass was the only medium, the work took on a new quality (Fig. 1.2, 1.3). Using the vessel as the representative for mankind, instead of tools or other fabricated items, the concept of my thesis was formed.

Once one has an understanding of the vessel's history, it is easy to see why I, as a glass artist, would choose the vessel to represent mankind. I have always loved the vessel both as a concept and as an object. Long before I ever learned about "glass art," I started blowing "glass craft." This means that I gave more care to the usefulness of an object than to its conceptual implications. With this background, I found that I could not, and did not, want to deviate from my use of the functional vessel. When starting to examine the relationship between mankind and nature, I decided to use organic glass forms to represent nature and to use tools and other fabricated items, to show humanity's influences on the organic. For example, several constructions were made using blown glass and used industrial materials. I found the materials to be too dissimilar to clearly represent my thesis statement. After a while, a reassessment of the

materials needed to support my thesis, became necessary. The search for the correct components continued and finally led to the use of sand cast glass to represent nature in conjunction with blown glass vessels to represent mankind.

The vessel has a long history throughout man kind's existence. The vessel is a useful tool that was utilized very early on in the existence of humans. It made transportation and containment of materials possible. The first vessels were found objects such as wood, rock or gourd that were hollowed out and could easily hold a variety of substances. Easily fabricated parts from animal killings such as bladders and skulls were also used as vessels (1) Arthur Train, The Story of Everyday Things (New York: Harper Brothers, 1941). As humans grasped an understanding of the working of wood and clay, vessels began to take on more specific purposes. Around 1500 B.C. in Western Asia, the first glass vessels were created (2) Hugh Tait, Glass 5,000 Years (New York: Harry N. Abrams Inc., 1991) 22. The history of the glass vessel is what interests me most because this is what I have chosen as a symbol for humanity.

The Mesopotamians were the first to create the glass vessel. It was made from a technique called "core forming". This consisted of creating a core out of dung, clay or other materials that were then formed into the shape of the vessel. Next hot glass was trailed in a thread around the core and then the piece was slowly cooled. When it was totally cooled, the sand composite core was picked out leaving only the positive shape which then became the vessel.(3) Robert J. Charleston, Masterpieces of Glass (New York: Harry N. Abrams Inc., 1990) 19. These were small, yet they served the purpose for which they were intended (small bottles, vases and pitchers). This technique is what enabled the vessel to keep its shape under the heat and weight of the threading process. All of my work used this core forming technique to enable the vessel to hold its shape during the casting process.

The techniques used for creating glass vessels have evolved over time. Today we know many different techniques for creating vessels. These are just some of those

types: free blown vessels, mold blown, pressed, fused, patte de verre, slumped and cast (4) Charleen K. Edwards, Survey of Glass Making from Egypt to the Present (Illinois: University of Chicago Press, 1977). All of these techniques have evolved over time because of humanity's need to diversify and perfect the vessel. A form as useful and diverse as the vessel gives an interested party a very good insight into the development of man kind. Over the years, in different societies, the vessel has been many different things. It has been used as a receptacle in the preservation of kings in Ancient Egypt. It has also been used as a method to tell stories such as in Greek and Roman societies. The ownership of certain vessels was also a status symbol for the aristocracies of Europe. In addition it has been an important religious symbol exemplified by the Holy Grail in the Christian religion and the Kiddush Cup in the Jewish religion. As our culture evolved we found quicker and easier ways to make vessels. Today we are slowly realizing the merits of the past techniques that incorporated much care and creativity. This is what makes the vessel a truly unique object.

By creating layers of sand cast glass surrounding the vessel I was able to suspend the vessel as well as contain it (Fig. 1.4). The layering was multiple in purpose and gave the piece an archaeological effect. The layers gave the effect of time settling around the vessel. By surrounding the vessel, mankind, with layers of glass, nature, it is being nurtured as well as contained (Fig. 1.5). Containment is very important when dealing with the relationship of man and nature. If nature and its resources become exhausted, then human civilization will collapse. Civilization will not thrive again until nature replenishes its resources. At the same time, if nature does not nurture the existence of all life forms, ours included, life can not exist.

Using very loose and undefined sand casting mold, I found that I was able to give my castings an organic sense. The glass had a free flowing quality. The glass was caught at a precise moment and then preserved in that state. The sand gave the glass an organic texture and helped create the illusion that the casting was not glass at

all. This was important because my work deals with creating illusion. The only part of the casting that revealed its origin was the very top clear glassy layer (Fig. 1.6). This was unmistakably the same material as the vessel, glass. This method enabled me to correctly represent the relationship that I felt exists between man and nature.

These pieces are not beautiful works of art, that was not the intention at all, for that has been done many times and it would not truly capture what really happens in a symbiotic relationship. By using glass this relationship appears to be very fragile. In reality, this is a misconception. Glass looks fragile, as does this relationship, but it is stronger than it appears. In the relationship that exists between man and nature both parties have their strengths. This potency is present in both mankind and nature. In these castings those strengths are sometimes represented by the thickness or many layers of the cast section, as in (Fig. 1.7). The strength of the vessel is shown as the vessel emerging or escaping from the casting as in (Fig. 1.5).

These pieces were intended to look ancient to the viewer; as if they were just unearthed and we were allowed to look into the past. It is my firm belief that if man treats nature irresponsibly, the survivor of this relationship will then be nature. That is to say, even if mankind becomes extinct, some part of nature will survive and the process of evolution will start again. This is not a pessimistic or an optimistic view, it is a fact. I have tried to show throughout these pieces that there is a precarious relationship between man and nature. I hope that all of those who see my work, will remember that this relationship exists and will be respectful of this association.

By encasing a functional vessel in the midst of an organic form, the viewer is invited to question the relationship between the vessel and sand casting. Is the vessel a prisoner trying to escape or is the relationship that of a mother and child? Is the organic form encasing and surrounding the vessel in a positive way? Is the vessel able to hold the organic mass at bay or will it crack and let the organic mass shatter along

with it? These are the questions we should ask ourselves when dealing with nature. These are some of the important questions I hope my work has conveyed.

(111) THE TECHNIQUE:

In this next section the processes I used will be discussed. There were four processes used in creating these pieces. The first was blown glass. The second technique was sand casting in which a sand mold is used to define a negative space. This negative space is then filled with molten glass which then creates a positive shape. Annealing was a very important factor in these pieces. Without proper annealing none of these pieces would have been possible. Lastly, sand blasting was used as the only cold working technique. It was mainly used to clean the excess sand off of the casting. The casting techniques and annealing cycles are what I will be concentrating on in this section.

A.) Sand Mixture:

20/1 mix Olivine Foundry Sand to Bentonite. Mix well, dampen with water and sift through a medium mesh screen until sand can be formed into a shape that will not break up when touched.

B.) The Molds:

Molds were built directly into the annealing ovens. Next the interior of the vessel was packed with sand. This was placed in the mold, and the annealer was brought up to temperature. (see Fig 2.1) This cycle varied with the size of both the vessel and mold. All the times I have listed are cumulative to show the total time needed in this sort of casting. This was the annealing schedule for pieces (Fig 1.4, 1.6,1.7, 1.8). These pieces are the ones being referred to when general annealing

cycles are mentioned. This schedule varied due to the interior size and thickness of the pieces.

Fig 2.1

9 Hours 0 to 450

15 Hours 450 to 750

18 Hours 750 to 950

19 Hours 950 to 1100

Hold at 1100 for at least 5 hours (24 hours total)

The more time the program was held at 1100, the less shock the vessel received when casting began.

C.) Casting and Annealing:

Next came the actual casting process. This began approximately 16 hours before casting. In order to make the glass hot enough for a good casting session, I had to finish charging the 400 lb. day tank at approximately 7:00 PM the previous night. The glass was raked once but not squeezed because if it was, the glass would quickly become too cold to pour correctly. When everything was at temperature, the process continued as follows. Ladles were filled and poured into the molds. This glass was then covered by a generous layer of sand. The sand compacts only slightly and a generous layer of sand produces a good size space (two inches of sand leaves a space one and a half inches wide). This process was repeated as many times as I deemed necessary.

When casting was done, the annealer had to be brought back down. With so much sand and glass in it, this was a very slow process. This is an example of my turn down schedule for an average piece.

Fig. 2.2

10 Hours to 910

20 Hours at 910

30 Hours to 750

35 Hours at 750

44 Hours to 450

48 Hours at 450

56 Hours to 95

The process of venting the oven must be done very slowly as any cool breeze will crack the piece. Long after the annealer has shut off, the sand retains its heat.

D.) Cold Work:

After the pieces came out of the annealer, they sat for at least a week. Then the vessel was masked off with a resist and the sand cast portions were sand blasted to remove any extra sand from the piece. This gave the cast section a cloudy, translucent look with very little sand remaining on the casting.

This is an outline of the process used in the pieces shown in this thesis. The best way to learn these techniques is through experimentation. Many people tried to tell me the "right way" but I truly feel the "right way" must be found by the person doing the work. This information worked for me and I hope it will give people a basic outline from which they can avoid a few of the problems I had in understanding this form of casting.

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(Fig.1.1)
Untitled: 48"x 36" x36"

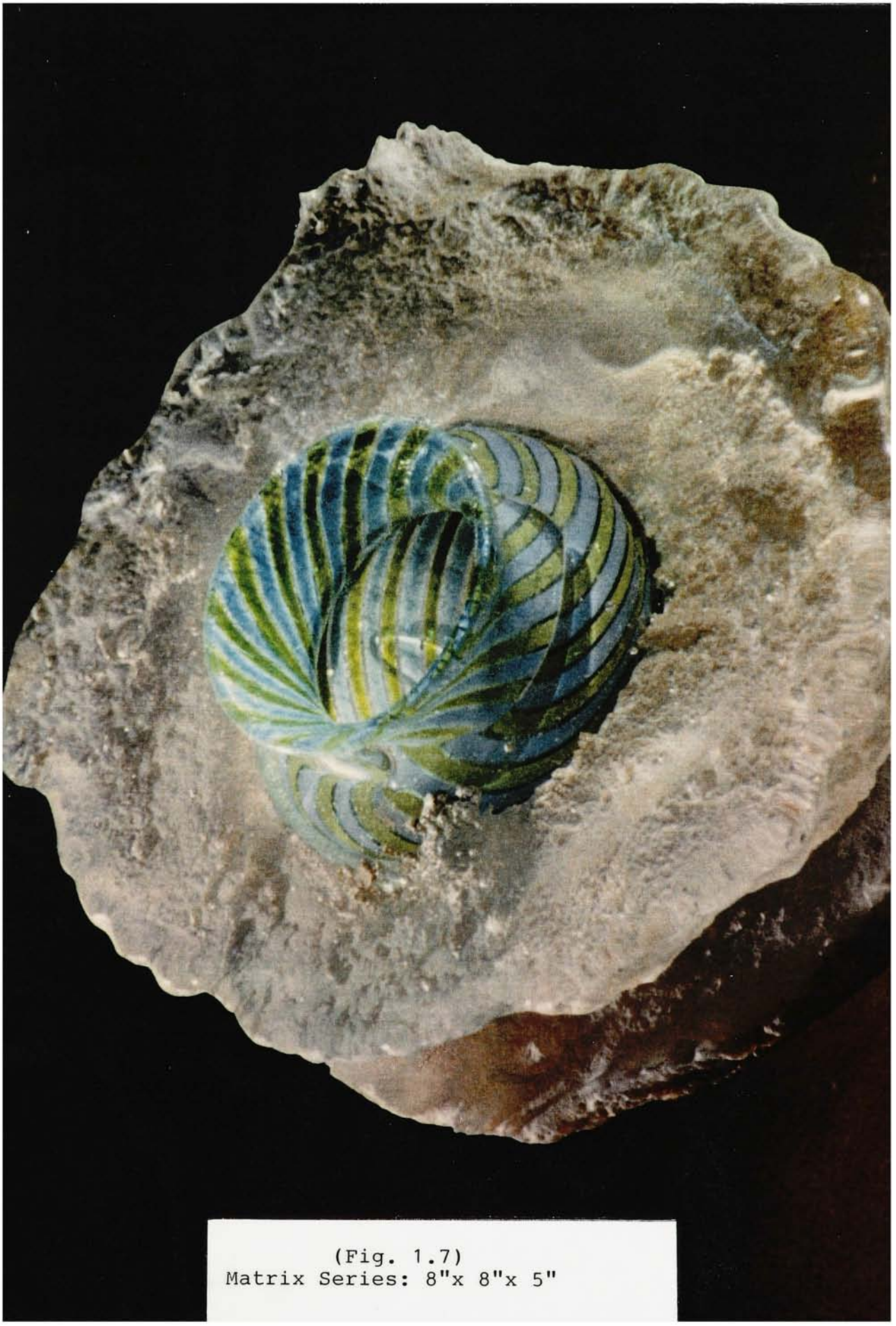
(Fig. 1.2)
Matrix Series: 17"x 17"x 9.2"

(Fig. 1.3)
Matrix Series: 17"x 17"x 9.2"

(Fig. 1.4)
Matrix Series: 11"x 4.2"x 11"

(Fig. 1.5)
Matrix Series: 6.3"x 12.6"x 11.8"

(Fig. 1.6)
Matrix Series: 8"x 6.5"x 6.5"



(Fig. 1.7)
Matrix Series: 8"x 8"x 5"

(Fig. 1.8)
Matrix Series: 11"x 3.7"x 10.3"